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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Maria Elena Ferrero

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YOUNG & THOMPSON

209 Madison Street

Suite 500

ALEXANDRIA, VA 22314

EXAMINER

CRANE, LAWRENCE E

ART UNIT

PAPER NUMBER

1623

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/589,621	FERRERO, MARIA ELENA	
	Examiner	Art Unit	
	Lawrence E. Crane	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 26, 2009 (amendment).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,9,10,14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 9, 10, 14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claims **2-8, 11-13 and 16-17** have been cancelled, no claims have been newly cancelled, claim **1** has been further amended, the disclosure and the abstract have not been further amended, and no new claims have been added as per the amendment filed May 26, 2009. No additional or supplemental Information Disclosure Statements (IDSs) have been filed as of the date of the Office action. Applicant has also filed a second declaration under 37 C.F.R. §1.132 and signed by the applicant, Mme. Ferrero, and dated May 4, 2009.

Claims **1, 9-10 and 14-15** remain in the case.

Note to applicant: when a rejection refers to a claim **X** at line **y**, the line number “y” is determined from the claim as previously submitted by applicant in the most recent response including ~~lines deleted by line through~~.

Claims **1, 9-10 and 14-15** are rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. 2

The instant disclosure has only provided two examples wherein the effectiveness of “o-ATP” in the inhibition of cell division of one class of endothelial cell (“HUVEC” cells) is disclosed. This showing, together with the previous assertions of applicant’s theory of the scope of the pharmaceutical activity of o-ATP, is insufficient as a written description to support claims **1, 9-10 and 14-15** wherein o-ATP has been asserted by applicant to be active against a large number of generic disease conditions (all “lymphomas,” all “leukemia[s],” and any disease wherein administration of o-ATP causes inhibition of “VEGF-induced cell proliferation” is an effective treatment. Applicant’s assertions are not deemed to support the present claims because of the presence of only a single direct test result showing that o-ATP has activity against what appears to be a single non-neoplastic cell line (human umbilical vein endothelial cells (HUVEC)) *in vitro*.. See *Ex parte Balzarini et al.* 21, USPQ 2d 1892, 1894 (BPAI, 1991), a decision in its first part standing for the proposition that claims directed to medicinal treatments of diseases in highly unpredictable art areas (cancer and tumor treatments remain highly unpredictable particularly in the area of neoplasms of the nervous system and the pancreas) are properly rejected under 35 U.S.C. §112, first

paragraph as lacking adequate enablement, in the absence of sufficient test data in support of the efficacy of the alleged treatment. See the MPEP at §2107.03 for additional guidance concerning this policy.

Applicant's arguments filed May 26, 2009 have been fully considered but they are not persuasive.

Applicant is referred to the response following the next rejection. In addition, the above rejection has been updated in response to and in view of the applicant's claim amendments.

Claims **1, 9-10 and 14-15** are rejected under 35 U.S.C. §112, first paragraph, because the specification, while being enabled for the inhibition of cell division of a single non-neoplastic cell type by the administration of "[periodate] oxidized adenosine triphosphate," does not reasonably provide enablement for the treatment of any neoplastic or other disease condition wherein the inhibition of angiogenesis or any other effect caused by administration of -- po-ATP -- . The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

The fundamental issue here is whether practicing the full scope of the instant invention is possible without undue experimentation. As provided for in *In re Wands* (858 F.2d 731, 737; 8 USPQ 2d 1400, 1404 (Fed Cir. 1988)) the minimum factors to be considered in determination of whether a conclusion of "undue experimentation" is appropriate are as follows:

A. The breadth of the claims: The instant claims are directed to the treatment of a vast array of generically defined disease conditions (all lymphomas and all leukemias) wherein VEGF-induced angiogenesis is effectively inhibited by administration of an effective amount of periodate oxidized ATP (po-ATP), and to pharmaceutical compositions wherein po-ATP is present in combination with a vast array of other medicinally active substances.

B. The nature of the invention: The invention is directed to treating diseases wherein angiogenesis is a necessary part of disease progression and therefore,

according to the theory of the disclosure, the inhibition of angiogenesis by administration of po-ATP would be effective in treating the disease.

C. The state of the prior art: Following a review of the art of record it is clear that -- po-ATP -- (defined as the dialdehyde produced by periodate oxidation of ATP) is capable of interfering with certain purinergic receptors, but there is no disclosure in said prior art of the administration of po-ATP alone or in combination with other medicinally active substances to treat atherosclerosis, leukemia, or any other neoplastic disease condition including lymphoma wherein angiogenesis is an essential part of disease development and/or disease progression over time.

D. The level of one of ordinary skill: The ordinary practitioner in the instant art area would be expected to have experience in medical practice and an understanding of biological sciences.

E. The level of predictability in the art: Predictability is inversely proportional to the knowledge of the ordinary practitioner concerning the treatment of the entire spectrum of the disease conditions claimed herein to be effectively treated. Neither the instant disclosure nor the prior art provide any guidance concerning how to practice the instant claimed method of treatment, thereby rendering the instant art area highly unpredictable.

F. The amount of direction provided by the applicant: The instant disclosure provides only two examples wherein the effect of po-ATP is disclosed as being effective in the inhibition of the cell growth of only one non-neoplastic cell line: human umbilical venous endothelial cells (HUVEC). No additional data is presently of record to support the extrapolation of this data to the instant claimed subject matter wherein po-ATP is administered in combination with a vast array of different classes of medicinally active ingredients to treat a vast array of disease conditions including all possible diseases classified as a "cancer" listed in claim 3 and one of the neoplastic diseases (leukemia) listed in claim 4.

G. The existence of working examples: Only two working examples have been provided in the disclosure as described in the preceding paragraph. Additional data has been supplied by two declarations filed June 17, 2008 and May 26, 2009 by

applicant/Mme. Ferrero, but the latter declaration is directed to an example that does not appear to represent an extension of experiments of record herein.

H. The quantity of experimentation needed to make or use the invention based on the content of the disclosure is deemed to be excessive because of the absence of sufficient test data and associated guidance. The absence of sufficient test data means that the ordinary practitioner does not have the guidance necessary to practice the vast array of different disease treatments without undue experimentation.

Applicant's arguments filed May 26, 2009 have been fully considered but they are not persuasive.

The above rejection has been updated and amended in response to applicant's submissions.

Examiner notes the second declaration filed under 37 C.F.R. §1.132 and signed by applicant. This declaration discloses subject matter that represents additional test data wherein the efficacy of po-ATP is clearly demonstrated to be effective in the treatment of a single variant of what appears to be a single species of the disease genus "lymphoma." However, examiner finds that this data is insufficient to permit grant of a patent claim encompassing the treatment of all variants of both the disease genus "lymphoma" and the disease genus "leukemia" because the original test data in the disclosure is not of a neoplastic disease (HUVEC is not a neoplastic disease cell type). Therefore, while the test data provided suggests that the claims may be directed in part to subject matter supported by the declaration test results, the instant disclosure does not adequately enable this subject matter. Examiner respectfully suggests that incorporation of the instant declaration into a CIP filing may be one way to proceed. Examiner further suggests that any CIP filing would be a substantially improvement over the instant filing if the declaration data is supplemented with additional tests of other neoplastic disease variants. Also examiner does not find in the present disclosure any mechanistic connection between the claimed treatments wherein o-ATP is administered, and the inhibition of the proposed neoplastic cell growth mechanism ("VEGF-induced cell proliferation"). This association needs to be more completely and convincingly established if possible in order to provide adequate disclosure support for claims directed to "inhibition of VEGF-induced cell proliferation."

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. §1.136(a).

A shortened statutory period for response to this final action is set to expire **THREE MONTHS** from the date of this action. In the event a first response is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 C.F.R. §1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than **SIX MONTHS** from the date of this final action.

Papers related to this application may be submitted to Group 1600 via facsimile transmission (FAX). The transmission of such papers must conform with the notice published in the Official Gazette (1096 OG 30, November 15, 1989). The telephone number to FAX (unofficially) directly to Examiner's computer is 571-273-0651. The telephone number for sending an Official FAX to the PTO is 571-273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner L. E. Crane whose telephone number is **571-272-0651**. The examiner can normally be reached between 9:30 AM and 5:00 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. S. Anna Jiang, can be reached at **571-272-0627**.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is **571-272-1600**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status Information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see < <http://pair-direct.uspto.gov> >.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).

LECrane:lec
09/14/2009

/Lawrence E. Crane/

Primary Examiner, Art Unit 1623

L. E. Crane
Primary Patent Examiner
Technology Center 1600